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(54) Title: NUTRACEUTICAL PRODUCTS CONTAINING SAMe AND DIETARY SUPPLEMENTS AND METHOD OF MANUFACTURING AND USE THEREOF

(57) Abstract: A nutraceutical product comprises a mixture SAMe and a dietary supplement, where the moisture content of the product is less than 5 weight percent. A nutraceutical preferred product includes a mixture of (RS)-(+)-SAMe and (SS)-(+)-SAMe diastereoisomers, with the (SS)-(+)-SAMe diastereoisomer being at a concentration of at least 95 weight percent of the mixture.

NUTRACEUTICAL PRODUCTS CONTAINING SAMe AND DIETARY SUPPLEMENTS & METHOD OF MANUFACTURING AND USE THEREOF

RELATED APPLICATIONS

This utility application is based on the following United States provisional patent applications: Serial No. 60/158,298, filed October 8, 1999, entitled Time Release Coated Natural Supplement; Serial No. 60/158,328, filed October 8, 1999, entitled Herbal Mind And Mood Support Composition; Serial No. 60/158,329, filed October 8, 1999, entitled Herbal Stress Support Composition; Serial No. 60/158,480, filed October 8, 1999, entitled Joint Support Composition; and Serial No. 60/158,482, filed October 8, 1999, entitled Herbal Diet And Energy Support Composition. All of these provisional patent applications are incorporated herein by reference and made a part of this application.

BACKGROUND OF THE INVENTION

S-adenosyl-L-methionine, and its salts, (either or both herein referred to as SAMe) are well known pharmacologically active compositions that combat depression, arthritis, and liver diseases such as, for example, cirrhosis. SAMe occurs as two diastereoisomers: (RS)-(+)-SAMe and (SS)-(+)-SAMe. The (SS)-(+)-SAM-e diastereoisomer is the pharmacologically active diastereoisomer, and SAMe products containing (SS)-(+)-SAMe at a concentration of at least 95 weight percent (%) of the total diastereoisomers mixture are known. A suitable source of SAMe, including the SAMe with the higher concentration of the (SS)-(+)-SAMe diastereoisomer, is Gnosis S. r. l. of Milan, Italy.

SUMMARY OF THE INVENTION

This invention is a nutraceutical product comprising a blend of SAMe and one or more dietary supplements. This nutraceutical product may be used by both humans and animals. Different nutraceutical products are provided having multiple beneficial properties. In this invention the dietary supplements enhance the beneficial effects of the SAMe, or provide additional beneficial effects, or both. The nutraceutical products of this invention preferably employ SAMe with the higher concentration of the (SS)-(+)-SAMe diastereoisomer.

The nutraceutical products of this invention may be administered by any conventional route such as, for example, oral, rectal, nasal, topical, or pareateral as tablets, caplets, softgel pills, capsules, suspensions, emulsions, solutions, suppositories, sprays, gums, drops, lozenges, or injectibles They may be sold either in bulk to companies that repackage the product for the consumer or in a form suitable for use directly by the consumer. For example, if ingested orally, the nutraceutical products of this invention are in the form of a softgel pill, caplet, capsule or tablet. Preferably, the softgel pill, caplet, capsule or tablet is treated with a time release agent. An enteric coating and/or micro-encapsulation may be employed to achieve time release, and one suitable time release agent is an aqueous ethyl cellulose dispersion sold under the trademark Surelease® by Colorcon, Inc. of Santa Ana, California.

Packaging of the nutraceutical products of this invention is important. As discussed subsequently in greater detail, moisture adversely affects SAMe. Retailers of nutraceutical products usually conduct accelerated aging tests by subjecting the packaged product to high temperatures and high humidity over a controlled time duration, measuring the SAMe concentration in the product before and after

testing. It has been discovered that the softgel pill, caplet, capsule or tablet form of the nutraceutical products of this invention completely enclosed and sealed within an aluminum foil package resist degradation. Preferably, the softgel pill, caplet, capsule or tablet is first completely enclosed within a plastic wrap and then completely enclosed and sealed the aluminum foil. The aluminum foil package acts as a moisture barrier, enabling said softgel pill, caplet, capsule or table to have substantially prolonged life when subjected to accelerated testing than a softgel pill, caplet, capsule or table contained within, for example, a sealed bottle or plastic blister pack. Preferably, the thickness of the aluminum foil is from 2 to 6 mils.

The nutraceutical products of this invention may also be sold in forms other than a softgel pill, caplet, capsule or tablet. For example these products may be used as topical applications such as creams, gels, patches, etc. They may also be in liquid form especially when used as an injectibles, or even as an enemas.

In the preferred embodiments of this invention the following dietary supplements are used:

Co-Q-10 (Coenzyme Q-10),
St. John's Wort derivative, either powder or any form of extract,
Ginkgo Biloba derivative, either powder or any form of extract,
Ma Huang derivative, either powder or any form of extract,
Epimeduim pinnatum derivative, either powder or extract,
Guarana derivative, either leaf or root powder or any form of extract,
Citrus Aurantium derivative, either powder or any from of extract,
Kava Kava derivative, either powder or any form of extract,
cetyl myristoleate (CMO),

cetyl myristoleate blended with cetyl oleate, cetyl esters and cetyl myristate,

Valerian derivative, either powder or any form of extract,

glutathione,

fructose – 1,6 – diphosphate (FDP),

glucosamine sulfate, glucosamine HCL, or glucosamine potassium,

methyl sulfanyl methane (MSM),

melatonin,

hydrolyzed collagen,

chondroitin sulfate,

citicoline,

alpha GPC.

Any one, or combinations of two or more, of these dietary supplements are mixed with SAMe, preferably with the SAMe comprising from about 0.1 to about 99 weight percent and the dietary supplement comprising from about 1 to about 99 weight percent of the nutraceutical product.

SAMe decomposes in the presence of water and high temperatures. This presents a problem when blending with dietary supplements. In accordance with this invention, during manufacture of the nutraceutical products of this invention conditions are controlled so that the moisture content of the product is less than 5 weight percent, preferably less than 3 weight percent. In some instances this may require drying the dietary supplements prior to blending with the SAMe. In the preferred manufacturing method the SAMe and dietary supplement or supplements being mixed with the SAMe are dry powders having a mesh ranging from about 60 to about 90. The humidity of the manufacturing environment of nutraceutical product is less than 25% and the temperature of the manufacturing environment of nutraceutical product is from 20 to 15 degrees Celsius. The

nutraceutical product is encapsulated within capsules within 2 hours after manufacture. Preferably, these capsules are enteric coated, or otherwise treat with a time release agent, within 2 hours after encapsulation.

This invention also includes a method of supplementing a diet by administering for at least 10 to 14 days SAMe at a dosage of from 800 to 1200 milligrams per day and at the same time administering a nutraceutical product comprising SAMe and a dietary supplement, said nutraceutical product including a a dosage of at least 400 milligrams per day of SAMe, and after 14 days administering only said nutraceutical product.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

STRESS REDUCTION COMPOSITION

The preferred stress reduction compositions of this invention preferably include a combination of SAMe and other natural stress reducing substances in effective amounts for maintaining and/or improving emotional and physical health during periods of stress. One preferred embodiment of this invention especially effective in reducing emotional and physical stress and improving the ability to cope with such stress is SAMe in combination with one or more of the following: a Kava Kava derivative and a Valerian derivative.

The following are the preferred weight percentage ranges of these stress reduction compositions:

Component	Weight Percentage
SAMe	about 5% to about 90%
Kava Kava 1-70% Extract Activity	about 5% to about 90%

Valerian 1-30% Extract Activity about 5% to about 90%

For efficacy in providing stress reduction, SAMe is administered in dosages ranging from 10 mg to 2000 mg per day. Most preferably, SAMe is present in an amount of 400 mg per total daily dose which is to be taken one to two times per day. Kava Kava extract is derived from a tropical plant found in the tropical regions of the Pacific rim and is known and used for its benefit of relieving symptoms of stress and anxiety, and to promote and induce relaxation. When used in combination with SAMe, a Kava Kava extract, preferably 1-70% by weight active ingredient, is present in an amount ranging from 10 mg to 2000 mg per dose per day. Preferably, a 30% by weight active ingredient Kava Kava extract is present in an amount of 600 mg per total daily dose taken one to two times.

Another composition which is effective in providing health benefits in the form of stress reduction and/or coping is Valerian Extract. Valerian is an herbal product known for its anti-anxiety and stress benefits and is sometimes used to help promote sleep. When used in combination with SAMe, a Valerian Root extract, preferably .8-30% by weight active ingredient is present in an amount ranging from 10 mg to 2000 mg per dose per day. Preferably, a 0.8% by weight Valerian Root extract, is present in an amount of 100 mg per total daily dose taken one to two times per day.

Another preferred composition is to combine all of the above: 200 mg SAMe with 600 mg Kava Kava extract, and 100 mg Valerian root extract within a time-release or enteric coated capsule, caplet, or tablet along with standard inert ingredients utilized in the art. This composition to be taken one to two times per day.

Preferred Dosages

1. For the first ten days: Take 800 – 1,200 mg per day of SAMe Active Ions– in addition to the Stress Support product.

2. Afterwards, continue only taking the Stress Support product daily.

- 400 mg of SAMe
- 600 mg of Kava Kava Extract, 30-50% Kavalactones
- 100 mg Valerian Root Extract (.8 – 1%) Valerenic acid

WEIGHT REDUCTION AND ENERGY ENHANCEMENT COMPOSITION

The preferred weight reduction and energy enhancement compositions of this invention preferably include a combination of SAMe and one or more other natural appetite suppressant and/or energy enhancing substances in effective amounts for this purpose. One preferred embodiment of this invention especially effective for weight control and energy enhancement is SAMe in combination with one or more of the following: a Ma Huang derivative, a Epimedium Pinnatum derivative, a Citrus Aurantium derivative, and a Guarana derivative. These substances suppress appetite and increase energy. These substances provide weight reduction benefits by speeding up the body's metabolism, thus increasing the body's ability to burn fat without exercise and enhance energy levels.

The following are the preferred weight percentage ranges of these weight reduction and energy enhancement compositions:

Component	Weight Percentage
SAMe	about 5% to about 90%
Ma Huang Extract 1-8% Activity	about 5% to about 90%
Epimedium Extract 1-50% Activity	about 5% to about 90%

Citrus Aruantium Extract 1-40% Activity	about 5% to about 90%
Guarana Extract 1-50% Activity	about 5% to about 90%

For efficacy in providing weight loss and energy benefits, SAMe is present in an amount ranging from 10 mg to 2000 mg per day. Preferably SAMe is present in an amount of 400 mg per day two times per day. Other weight loss benefit compositions may be taken with SAMe.

Another composition that is effective in providing health benefits in the form of weight reduction is Ma Huang. Ma Huang is a naturally occurring herb which contains as an active weight reduction ingredient the sympathomimetic compound Ephedra Sinica, or its extract ephedrine. When used in combination with SAMe, Ma Huang Extract, preferably at a concentration of 1-8% by weight Activity, is present in an amount ranging from 10 mg to 2000 mg per dose per day. Preferably, a 6% by weight Ma Huang extract is present in an amount of 300 mg per daily dose taken two times per day before morning and evening meal.

Another composition which is effective in providing health benefits in the form of weight reduction is Epimedium Pinnatum Extract. Epimedium Extract is known to increase energy levels and metabolism. When used in combination with SAMe, Epimedium Extract, preferably at a concentration of 1-50% by weight Activity is present in an amount ranging from 10 mg to 2000 mg per dose. Preferably, a 10% by weight Epimedium Pinnatum extract is present in an amount of 100 mg per daily dose taken two times per day before morning and evening meal.

Another composition which is effective in providing health benefits in the form of weight reduction is Citrus Aurantium Extract. Citrus Aurantium Extract is known to increase energy levels and metabolism. When used in combination with SAMe, a 1-40% by weight

Activity concentration of Citrus Aurantium Extract is present in an amount ranging from 10 mg to 2000 mg per daily dose. Preferably, a 4% by weight Citrus Aurandum extract is present in an amount of 100 mg per dose taken two times per day before morning and evening meal.

Another composition which is effective in providing health benefits in the form of weight reduction is Guarana Extract. Guarana Extract is known to increase energy levels and metabolism. When used in combination with SAMe, a 1-50% by weight Activity concentration of Guarana is present in an amount ranging from 10 mg to 2000 mg daily per dose. Preferably, a 10% by weight caffeine Guarana extract is present in an amount of 80 mg per dose taken two times per day.

Another preferred composition is to combine all of the above for an average daily dosage as follows: 200 mg to 400 mg SAMe with 900 mg Ma Huang Extract, 200 mg Epimedium Pinnatum Extract, 100 mg Citrus Aurantium Extract and 100 mg Guarana Extract within a time-release coated capsule or tablet along with standard inert ingredients utilized in the art.

Another preferred composition is to combine all of the above: 400 mg SAMe with 300 mg Ma Huang Extract, 100 mg Epimedium Pinnatum Extract, 100 mg Citrus Aurantium Extract and 80mg Guarana Extract within a time-release coated capsule or tablet along with standard inert ingredients utilized in the art; said composition to be taken two times per day before morning and evening meal.

<u>Preferred Dosages</u>

1. For the first ten days: Take 800 – 1,200 mg per day of SAMe 400 mg Active Ions tablets, caplets, or capsules – in addition to our Diet Support

2. Afterwards, continue only taking the Diet Support composition daily.

- 400 mg of Active SAMe Ions
- 300-400 mg of Ma Huang Extract 6% Alkaloids
- 100 mg Epimedium Pinnatum Extract 10-30% Icariin
- 100-200 mg Citrus Aurantium Extract, 4-6% Synephrine
- 80-120 mg Guarana Seed Extract 10% Caffeine

JOINT ANTI-INFLAMMATION COMPOSITION

The preferred anti-inflammation compositions of this invention preferably include a combination of SAMe and other natural anti-inflammation substances in effective amounts for this purpose. One preferred embodiment of this invention especially effective for inflammation reduction and joint pain is SAMe in combination with one or more of the following: methyl sulfanyl methane, cetyl myristoleate, glucosamine sulfate, glucosamine HCL, or glucosamine potassium, and hydrolyzed collagen. These components are known to help (a) relieve symptoms of arthritis and inflammation, (b) rebuild connective tissue, and (c) relieve symptoms related to sport injury and accidents affecting joints. There is a benefit to be found in taking these substances in combination, which increases the overall health benefit to joints over that obtained by taking each substance individually.

The following are the preferred weight percentage ranges of these anti-inflammation compositions:

Component	Weight Percentage
SAMe	about 5% to about 90%
methyl sulfanyl methane	about 5% to about 90%
Cetyl myristoleate 1-99% Pure	about 5% to about 90%
Glucosamine sulfate, HCL or potassium	about 5% to about 90%
Hydrolyzed collagen	about 5% to about 90%

For efficacy in providing joint health benefits, SAMe is administered in an amount ranging from 10 mg to 2000 mg per day. Preferably SAMe is present in an amount ranging from 400 mg to 800 mg per day. Most preferably, SAMe is present in an amount of 100mg per dose which is to be taken two to three times per day. Other joint benefit compositions may be taken with SAMe.

Another composition which is effective in providing health benefits to joints, is MSM (methyl sulfanyl methane). MSM is known to reduce symptoms caused by arthritis and sport injuries. When used in combination with SAMe, MSM is present in an amount ranging from 10 mg to 5000 mg per daily dose. Preferably, MSM is present in an amount of 300 mg per dose taken two times per day.

Another composition which is effective in providing health benefits to joints, is cetyl myristoleate. Cetyl mysristoleate is known to help symptoms of rhumotoid arthritis and inflammation. When used in combination with SAMe, a 1-99% by weight concentration of cetyl myristoleate is present in an amount ranging from 0.5 mg to 2000 mg per dose per day. Preferably, an 20% by weight concentration of cetyl mysristoleate is present in an amount of 50 mg per dose taken two times per day.

Another composition which is effective in providing health benefits to joints is glucosamine sulfate, glucosamine HCL, or glucosamine potassium. This composition is known to help rebuild connective tissues and to ease symptoms of arthritis, injury, and inflammation. When used in combination with SAMe, glucosamine sulfate, glucosamine HCL, or glucosamine potassium is present in an amount ranging from 10 mg to 2000 mg per dose per day. Preferably, glucosamine sulfate, glucosamine HCL, or glucosamine potassium is present in an amount of 1000 mg per dose taken two to three times per day.

Another preferred composition is to combine all of the above: 100 mg SAMe with 300 mg MSM, 50 mg CMO, and 1000 mg glucosamine sulfate within a time-release coated capsule or tablet along with standard inert ingredients utilized in the art; said composition to be taken one to four times per day.

Another preferred composition is to combine all of the above: about 400 mg SAMe with about 1000 mg MSM, with about 75 mg cetyl myristoleate, with about 1,000 mg glucosamine sulfate, with about 100 mg hydrolyzed collagen within a time-release coated capsule or tablet.

Preferred Dosages

1. For the first ten days: Take 800 – 1,200 mg per day of SAMe 400mg Active Ions tablets, caplets, or capsules – in addition to the Joint Support composition

2. Afterwards, continue only the Joint Support daily.

- 400 mg of Active SAMe Ions
- 1000 – 1,500 mg of Glucosamine Sulfate (or HCL or Potassium)
- 300-500 mg of MSM (Methylsulfonylmethane)
- 50-500 mg of CMO blend, 20% Cetyl Myristoleate

MIND AND MOOD ENHANCEMENT COMPOSITION

The preferred mind and mood enhancement compositions of this invention preferably include a combination of SAMe and other natural mind and mood substances in effective amounts for this purpose. One preferred embodiment of this invention especially effective for mind and mood enhancement is SAMe in combination with one or more of the following: a St. John's Wort derivative and a Ginko Biloba derivative. These emotional balance and brain function compositions are presented in a variety of formulations, with or without other emotional balance

and/or brain function ingredients.

According to the invention, the herbal treatment composition preferably includes the desired combination of natural mood and brain function promoting substances in effective amounts for maintaining and/or improving emotional balance and/or memory and/or brain function. The foregoing descriptions of quantity and dosage are intended to be specific examples and are not intended to limit the scope of the invention.

The following are the preferred weight percentage ranges of these mind and mood enhancement compositions:

Component	Weight Percentage
SAMe	about 5% to about 90%
St. John's Wort .1-50%	about 5% to about 90%
Ginkgo Biloba 1-99%	about 5% to about 90%

For efficacy in providing mind and mood benefits, SAMe is administered in an amount ranging from 10 mg to 2000 mg per day. Preferably, SAMe is used in an amount 400 mg per day. Most preferably, SAMe is used in an amount of 400 mg per daily dose which is to be taken one to two times per day.

Another composition which is effective in providing health benefits in the form of increased emotional balance is St. John's Wort. St. John's Wort is a naturally occurring herb which contains the therapeutically active ingredient hypericin and hyperforin. These ingredients have an anti-depressive effect which is believed to be caused by modifying serotonin levels in the brain. When used in combination with SAMe, St John's Wort, preferably a concentration between .1-50% by weight, is used in an amount ranging from 10 mg to 5000 mg per dose per day. Preferably a 0.3% by weight hypericin

concentration of St. John's Wort extract is used in an amount of 900 mg per daily dose taken two times per day.

Another composition that is effective in providing health benefits in the form of improving memory and brain function as well as acting as an anti-depressant is Ginko Biloba. When used in combination with SAMe, Ginko Biloba, preferably a concentration between 1-99% by weight, is used in an amount ranging from 0.5 mg to 2000 mg per dose per day. Preferably, a 24/6% by weight Ginko Biloba extract, is used in an amount of 60 mg per daily dose.

Another preferred composition is to combine all of the above: 200 to 400 mg SAMe with 60 mg Ginko Biloba Extract, and 900 mg St. John's Wort extract within a time-released coated capsule or tablet along with standard inert ingredients utilized in the art; said composition to be taken one to two times per day.

Another preferred composition is to combine all of the above: 100mg SAMe with 60 mg Ginko Biloba Extract, and 900 mg St. John's Wort extract within a time-released coated capsule or tablet along with standard inert ingredients utilized in the art; said composition to be taken one to two times per day.

The present invention may be formulated for administration by any conventional route including but not limited to oral, rectal, nasal, topical, or pareateral. The composition may take the form of tablets, capsules, suspensions, emulsions, solutions, suppositories, sprays or injectibles, but is not limited to these forms.

Preferred Dosages

1. For the first ten days: Take 800 – 1,200 mg per day of the SAMe 400mg Active Ions tablets, caplets, or capsules – in addition to our Mind and Mood Product

2. Afterwards, continue only taking the Mind and Mood composition daily.

- 400 mg of Active SAMe Ions
- 60 mg of Ginkgo Biloba Extract, 24% Flavoneglycosides – 6-7% Terpenelactones
- 500-900 mg of St. John's Wort Extract, .3% Hypericin & 1-2% Hyperforin.

SAMe Mind and Mood Support Composition:

3. For the first ten days: Take 800 – 1,200 mg per day of our SAMe 400mg Active Ions tablets, caplets, or capsules – in addition to our Mind and Mood Product
4. Afterwards, continue only taking the Mind and Mood product daily.

- 400 mg of Active SAMe Ions
- 60 mg of Ginkgo Biloba Extract, 24% Flavoneglycosides – 6-7% Terpenelactones
- 500-900 mg of St. John's Wort Extract, .3% Hypericin & 1-2% Hyperforin.

LIVER ENHANCEMENT AND ANTI-OXIDANT COMPOSITION

The preferred liver enhancement and anti-oxidant compositions of this invention preferably include a combination of SAMe and other natural liver enhancement and anti-oxidant substances in effective amounts for this purpose. One preferred embodiment of this invention especially effective as a liver enhancement and anti-oxidant is SAMe in combination with one or more of the following: Coenzyme Q-10, glutathione, and frutose – 1,6 – diphosphate.

The following are the preferred weight percentage ranges of these liver enhancement and anti-oxidant compositions:

Component	Weight Percentage
SAMe	about 5% to about 90%
Coenzyme Q-10	about 5% to about 90%

Glutathione	about 5% to about 90%
Frutose – 1,6 – diphosphate	about 5% to about 90%

Preferred Dosages

- 150 mg Co-Q-10 (Coenzyme Q-10)
- 400 mg SAMe
- 100-300 mg Glutathione
- 50-150 mg Frutose – 1,6 – Diphosphate (FDP)

SAMe Liver and Anti-Oxidant Support

- 150 mg Co-Q-10 (Coenzyme Q-10)
- 400 mg SAMe
- 100-300 mg Glutathione
- 50-150 mg Frutose – 1,6 – Diphosphate (FDP)

SLEEP ENHANCEMENT COMPOSITION

The preferred sleep enhancement compositions of this invention preferably include a combination of SAMe and a natural sleep enhancement substances in effective amounts for this purpose. One preferred embodiment of this invention especially effective a sleep enhancement product is SAMe in combination with one or more of the following: melatonin and a Kava Kava derivative.

The following are the preferred weight percentage ranges of these sleep enhancement compositions:

Component	Weight Percentage
SAMe	about 5% to about 90%
Melatonin	about 5% to about 90%
Kava Kava Extract	about 5% to about 90%

Preferred Dosages

- 50 mg Melatonin
- 600 mg Kava Kava Extract, 30% Kavalactones
- 400 mg SAMe Active Ions
- 100 mg Valerian Extract .8-1%

The following are examples for the manufacture of the most preferred compositions.

Production Example I (Stress Reduction Composition)

Starting material:

35.3 kilograms of Kava Kava 30% kavalactones
47.1 kilograms of SAMe, tosylate salt
5.9 kilograms of Valerian 0.8% by weight Valerenic Acid
200 kilograms of excepients and miscellaneous fillers
125,000 "00" size capsules

- Insure that all ingredients are at approximately 2% - 3% moisture content.
- Maintain average humidity of the manufacturing environment at under 25% during manufacture.
- Maintain average temperature of the manufacturing environment is under 20 degrees Celsius.
- Make sure process time from mixture to encapsulation is under 2 hours.
- Within 2 hours of encapsulation, enteric coat , or otherwise treat with a time release agent, the capsules for optimum stability

Production Example II (Mind and Mood Enhancement Reduction Composition)

Starting material:

50 kilograms of SAMe, tosylate salt
4 kilograms of Ginkgo Biloba Extract 24/6% by weight Extract
31 kilograms of St. John's Wort, 3% by weight Extract
240 kilograms of excepients and miscellaneous fillers
125,000 "00" size capsules

- Insure that all ingredients are at approximately 2% - 3% moisture content.
- Maintain average humidity of the manufacturing environment is at under 25%
- Maintain average temperature of the manufacturing environment is under 20 degrees Celsius
- Make sure process time from mixture to encapsulation is under 2 hours.
- Within 2 hours of encapsulation, enteric coat, or otherwise treat with a time release agent, the capsules for optimum stability

Production Example III (Joint Anti-Inflammation Composition)

Starting material:

33.4 kilograms of SAMe, tosylate salt
41.7 kilograms glucosamine sulfate
12.5 kilograms of methyl sulfanyl methane (MSN)
2.1 kilograms of a 20% by weight cetyl myristoleate blend.
10.4 kilograms of excepients and miscellaneous fillers
125,000 "00" size capsules

- Insure that all ingredients are at approximately 2% - 3% moisture content.
- Maintain average humidity of the manufacturing environment is under 25%
- Maintain average temperature of the manufacturing environment is at under 20 degrees Celsius
- Make sure process time from mixture to encapsulation is under 2 hours
- Within 2 hours of encapsulation, enteric coat, or otherwise treat with a time release agent, the capsules for optimum stability

Production Example IV (Weight Reduction and Energy Enhancement Composition)

Starting material:

50 kilograms of SAMe, tosylate salt
19 kilograms Ma Huang Extract 6% by weight
6.3 kilograms of Epimedium Pinnatum Extract 10% by weight
6.3 kilograms of Citrus Aurantium Extract 6% by weight
5 kilograms of Guarana Extract 10% by weight

13.7 kilograms of excepients and miscellaneous fillers
125,000 "00" size capsules

- Insure that all ingredients are at approximately 2% - 3% moisture content.
- Maintain average humidity of the manufacturing environment is at under 25%.
- Maintain average temperature of the manufacturing environment is under 20 degrees Celsius.
- Make sure process time from mixture to encapsulation is under 2 hours.
- Within 2 hours of encapsulation, enteric coat, or otherwise treat with a time release agent, the capsules for optimum stability

Production Example V (Liver Enhancement and Anti-Oxidant Composition)

Starting material:

25.8 kilograms of SAMe, tosylate salt
9.7 kilograms Co-Q-10
6.5 kilograms glutahion
6.4 kilograms fructose – 1,6 – diphosphate
25.8 kilograms of excepients and miscellaneous fillers
125,000 "00" size capsules

- Insure that all ingredients are at approximately 2% - 3% moisture content.
- Maintain average humidity of the manufacturing environment is at under 25%.
- Maintain average temperature of the manufacturing environment is under 20 degrees Celsius.
- Make sure process time from mixture to encapsulation is under 2 hours.
- Within 2 hours of encapsulation, enteric coat, or otherwise treat with a time release agent, the capsules for optimum stability

Production Example VI (Sleep Enhancement Composition)

Starting material:

47.1 kilograms of SAMe, tosylate salt

3.0 kilograms of melatonin
35.5 kilograms of Kava Kava Extract
5.9 kilograms of Valerian Root Extract
8.9 kilograms of excepients and misc. fillers
125,000 "00" size capsules

- Insure that all ingredients are at approximately 2% - 3% moisture content.
- Maintain average humidity of the manufacturing environment is at under 25%.
- Maintain average temperature of the manufacturing environment is under 20 degrees Celsius.
- Make sure process time from mixture to encapsulation is under 2 hours.
- Within 2 hours of encapsulation, enteric coat, or otherwise treat with a time release agent, the capsules for optimum stability

SCOPE OF THE INVENTION

The above presents a description of the best mode contemplated of carrying out the present invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains to make and use this invention. This invention is, however, susceptible to modifications and alternate constructions from that discussed above which are fully equivalent. Consequently, it is not the intention to limit this invention to the particular embodiments disclosed. On the contrary, the intention is to cover all modifications and alternate constructions coming within the spirit and scope of the invention as generally expressed by the following claims, which particularly point out and distinctly claim the subject matter of the invention:

THE CLAIMS

1. A nutraceutical product comprising a mixture of SAMe and Co-Q-10.

2. The nutraceutical product of Claim 1 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the Co-Q-10.

3. The nutraceutical product of Claim 2 where the moisture content of the product is less than 5 weight percent.

4. A nutraceutical product comprising a mixture SAMe and St. John's Wort derivative.

5. The nutraceutical product of Claim 4 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the St. John's Wort derivative.

6. The nutraceutical product of Claim 5 where the moisture content of the product is less than 5 weight percent.

7. A nutraceutical product comprising a mixture SAMe and a Ginkgo Biloba derivative.

8. The nutraceutical product of Claim 7 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the Ginkgo Biloba derivative.

9. The nutraceutical product of Claim 8 where the moisture content of the product is less than 5 weight percent.

10. A nutraceutical product comprising a mixture SAMe and a Ma Huang derivative.

11. The nutraceutical product of Claim 10 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the Ma Huang derivative.

12. The nutraceutical product of Claim 11 where the moisture content of the product is less than 5 weight percent.

13. A nutraceutical product comprising a mixture SAMe and a Epimeduim Pinnatum derivative.

14. The nutraceutical product of Claim 13 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the Epimeduim Pinnatum derivative.

15. The nutraceutical product of Claim 14 where the moisture content of the product is less than 5 weight percent.

16. A nutraceutical product comprising a mixture SAMe and a Guarana derivative.

17. The nutraceutical product of Claim 16 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the Guarana derivative.

18. The nutraceutical product of Claim 17 where the moisture content of the product is less than 5 weight percent.

19. A nutraceutical product comprising a mixture SAMe and a Citrus Aurantium derivative.

20. The nutraceutical product of Claim 19 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the Citrus Aurantium derivative.

21. The nutraceutical product of Claim 20 where the moisture content of the product is less than 5 weight percent.

22. A nutraceutical product comprising a mixture SAMe and a Kava Kava derivative.

23. The nutraceutical product of Claim 22 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the Kava Kava derivative.

24. The nutraceutical product of Claim 23 where the moisture content of the product is less than 5 weight percent.

25. A nutraceutical product comprising a mixture SAMe and cetyl myristoleate.

26. The nutraceutical product of Claim 25 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the cetyl myristoleat .

27. The nutraceutical product of Claim 29 where the moisture content of the product is less than 5 weight percent.

28. The nutraceutical product of Claim 27 including cetyl oleate, cetyl esters, or cetyl myristate.

29. The nutraceutical product of Claim 28 comprising from 20 to 80 weight percent of the cetyl myristoleate and comprising from 20 to 80 weight percent of the cetyl oleate, cetyl esters, or cetyl myristate.

30. A nutraceutical product comprising a mixture SAMe and a Valerian derivative.

31. The nutraceutical product of Claim 33 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the Valerian derivative.

32. The nutraceutical product of Claim 31 where the moisture content of the product is less than 5 weight percent.

33. A nutraceutical product comprising a mixture SAMe and glutathione.

34. The nutraceutical product of Claim 33 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the glutathione.

35. The nutraceutical product of Claim 34 where the moisture content of the product is less than 5 weight percent.

36. A nutraceutical product comprising a mixture SAMe and fructose – 1,6–diphosphate.

37. The nutraceutical product of Claim 36 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the fructose – 1,6 – diphosphate.

38. The nutraceutical product of Claim 37 where the moisture content of the product is less than 5 weight percent.

39. A nutraceutical product comprising a mixture SAMe and glucosamine sulfate, glucosamine HCL or glucosamine potassium.

40. The nutraceutical product of Claim 39 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the glucosamine sulfate, HCL or potassium.

41. The nutraceutical product of Claim 40 where the moisture content of the product is less than 5 weight percent.

42. A nutraceutical product comprising a mixture SAMe and methyl sulfanyl methane.

43. The nutraceutical product of Claim 42 comprising from 0.1 to 99 weight percent of the SAMe and from 1 to 99 weight percent of the methyl sulfanyl methane.

44. The nutraceutical product of Claim 43 where the moisture content of the product is less than 5 weight percent.

45. A nutraceutical product comprising a mixture SAMe and a dietary supplement, with the moisture content of the product being less than 5 weight percent.

46. The nutraceutical product of Claim 45 where the SAMe is a mixture of (RS)-(+)-SAMe and (SS)-(+)-SAMe diastereoisomers, with the (SS)-(+)-SAMe diastereoisomer being at a concentration of at least 95 weight percent of the mixture.

47. A nutraceutical product comprising a softgel pill, caplet, capsule or tablet treated with a time release agent, said softgel pill, caplet, capsule or tablet containing a mixture SAMe and a dietary supplement, with the moisture content of the mixture being less than 5 weight percent.

48. The nutraceutical product of Claim 47 where the softgel pill, caplet, capsule or table sealed within an aluminum foil package that acts as a moisture barrier, enabling said softgel pill, caplet, capsule or tablet to have substantially prolonged life when subjected to accelerated testing than a softgel pill, caplet, capsule or table contained within a sealed bottle.

49. The nutraceutical product of Claim 47 where the time release agent is an aqueous ethyl cellulose dispersion.

50. The nutraceutical product of Claim 47 where the SAMe is a mixture of (RS)-(+)-SAMe and (SS)-(+)-SAMe diastereoisomers, with the (SS)-(+)-SAMe diastereoisomer being at a concentration of at least 95 weight percent of the mixture.

51. A nutraceutical product comprising a mixture of SAMe, a Kava Kava derivative, and a Valerian derivative.

52. The nutraceutical product of Claim 51 where the Kava Kava derivative includes from 30 to 50 weight percent Kavalactones.

53. The nutraceutical product of Claim 51 where the Valerian derivative includes from 0.8 to 1 weight percent Valerenic acid.

54. A nutraceutical product comprising a mixture of SAMe, a Ginkgo Biloba derivative, and a St. John's Wort derivative.

54. A nutraceutical product comprising a mixture of SAMe, glucosamine sulfate, methyl sulfanyl methane, and cetyl myristoleate.

55. A nutraceutical product comprising a mixture of SAMe, Ma Huang derivative, Epimedium Pinnatum, derivative, Citrus Aurantium derivative, Guarana derivative.

56. A nutraceutical product comprising a mixture of SAMe, Co-Q-10, glutahion, and fructose – 1,6 – diphosphate.

57. A nutraceutical product comprising a mixture of SAMe, a Kava Kava derivative, a Valerian derivative, and melatonin.

58. A nutraceutical product comprising a mixture of SAMe and at least two of the following ingredients:

Co-Q-10 (Coenzyme Q-10),

St. John's Wort derivative, either powder or any form of extract,

Ginkgo Biloba derivative, either powder or any form of extract,

Ma Huang derivative, either powder or any form of extract,
Epimeduim pinnatum derivative, either powder or extract,
Guarana derivative, either leaf or root powder or any form of extract,
Citrus Aurantium derivative, either powder or any from of extract,
Kava Kava derivative, either powder or any form of extract,
cetyl myristoleate (CMO),
cetyl myristoleate blended with cetyl oleate, cetyl esters and cetyl myristate,
Valerian derivative, either powder or any form of extract,
glutathione,
fructose – 1,6 – diphosphate (FDP),
glucosamine sulfate, glucosamine HCL, or glucosamine potassium,
methyl sulfanyl methane (MSM),
melatonin,
hydrolyzed collagen,
chondroitin sulfate,
citicoline,
alpha GPC.

57. A nutraceutical product comprising a mixture of SAMe and melatonin.

58. A nutraceutical product comprising a mixture of SAMe and hydrolyzed collagen.

59. A nutraceutical product comprising a mixture of SAMe and chondroitin sulfate,

60. A nutraceutical product comprising a mixture of SAMe and citicoline,

61. A nutraceutical product comprising a mixture of SAMe and alpha GPC.

62. A method of manufacturing a nutraceutical product comprising mixing SAMe and a dietary supplement under conditions where the moisture content of the product is less than 5 weight percent.

63. The method of Claim 62 where the humidity of the manufacturing environment of nutraceutical product is less than 25%.

64. The method of Claim 62 where the temperature of the manufacturing environment of nutraceutical product is from 20 to 15 degrees Celsius.

65. The method of Claim 64 where the nutraceutical product is encapsulated with capsules within 2 hours after manufacture.

66. The method of Claim 65 where the capsules are enteric coat, or otherwise treat with a time release agent, within 2 hours after encapsulation.

67. A method of supplementing a diet by administering for at least 10 to 14 days SAMe at a dosage of from 800 to 1200 milligrams per day and at the same time administering a nutraceutical product comprising SAMe and a dietary supplement, said nutraceutical product including a a dosage of at least 400 milligrams per day of SAMe, and after 14 days administering only said nutraceutical product.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/27559

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :A61K 31/12, 31/20, 31/40, 31/66, 31/70, 35/78, 39/385
US CL :424/195.1, 514/ 46, 125, 415, 560, 689
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/195.1, 514/ 46, 125, 415, 560, 689

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

REGISTRY, CAPLUS, NAPRALERT, BIOSIS, MEDLINE, EMBASE, WPIDS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Database CAPLUS on STN (Columbus, OH, USA), No. 129:347310, HENDERSON ET EL. 'Amino sugar, glycosaminoglycan or glycosaminoglycan-like compounds, and S-adenosylmethionine,' abstract, WO 9848816 A1, 19981105.	1-67
Y	Database CAPLUS on STN, (columbus, OH, USA), No. 130:329206, HENRIKSEN, B 'Pharmaceutical formulation for treating liver disorders containin inorganic selenium and vitamins,' abstract, EP 913155 A2, 19990506.	1-67

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 DECEMBER 2000	17 JAN 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer REBECCA COOK Telephone No. (703) 308-1245

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